



Infectious Disease Epidemiology Report

Norovirus Outbreaks – Maine, 2008-2011



Introduction

Noroviruses are a group of viruses that cause acute gastroenteritis. What is often referred to as the “stomach flu” is not flu at all and may actually be illness from norovirus infection. Noroviruses are highly contagious and only a small number of viral particles can cause an infection. Transmission occurs in several ways: the most common is the fecal-oral route, but foodborne transmission, environmental or fomite contamination, and secondary person-to-person transmission also occur. The multiple routes of transmission make it difficult to determine the source of infection during outbreaks. There are several strains of noroviruses. Genogroups I, II and IV infect humans. Genogroup II (GII) is the most prevalent human genogroup. Immunity to norovirus lasts only a few months and is strain-specific, so individuals may be infected repeatedly throughout their life.

Nationwide, the federal CDC estimates that more than 21 million cases of acute gastroenteritis each year are due to norovirus infection, and more than 50% of all foodborne disease outbreaks are due to noroviruses. Over 80% of norovirus outbreaks occur during November-April. In Maine, outbreaks are typically seen from late fall through early spring.

Methods

The Infectious Disease Epidemiology Program monitors outbreaks of gastrointestinal illness. All instances of increased incidence or clusters of gastrointestinal illness are reportable. Individual cases of norovirus illness are not. Reports of clusters of gastrointestinal illness are evaluated to determine if there is an outbreak and if there is a need for additional investigation. Symptomatic individuals are asked to submit stool or vomit specimens to confirm norovirus as a cause of illness.

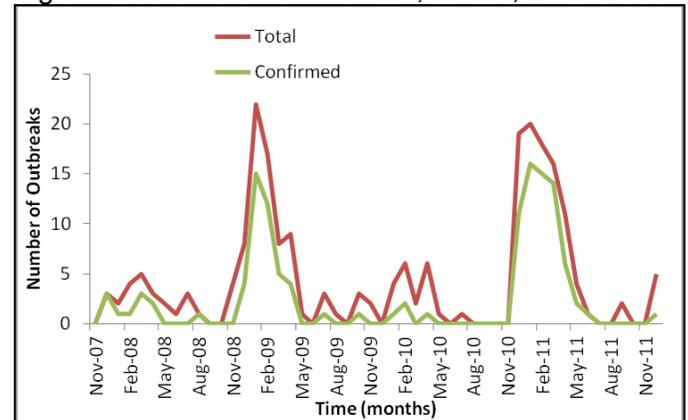
Maine’s Health and Environmental Testing Laboratory (HETL) performs norovirus testing using polymerase chain reaction (PCR) and determines the genogroup of norovirus, reporting either genogroup I or genogroup II.

An outbreak is considered laboratory confirmed if there is at least one case that tests positive for norovirus. Other outbreaks are considered to be suspect for norovirus if the symptoms, incubation period and possible routes of transmission are consistent with norovirus infection and there is no laboratory confirmation.

Results

Between November 2010 and April 2011, there were 62 laboratory confirmed norovirus outbreaks and 22 suspect outbreaks. The number of outbreaks reported appears to be cyclical with every other year having an increased incidence.

Figure 1. Norovirus Outbreaks*, Maine, 2007-2011



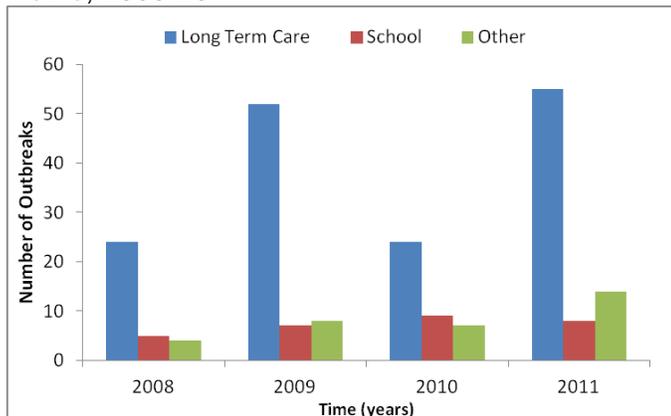
*includes confirmed and suspect outbreaks

During December 2011, there were five reports of norovirus outbreaks, with only one that was laboratory confirmed (20%). In December 2010, there were 19 reports of norovirus outbreaks; 11 (58%) with laboratory confirmation.

Outbreaks are most often reported by long term care facilities. Schools, hospitals, summer camps, and large events such as weddings have also experienced outbreaks. Outbreaks occur throughout the state, but are more frequent in the higher populated counties in Maine.

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Figure 2. Norovirus Outbreaks* by Type of Facility, Maine, 2008-2011



*includes confirmed and suspect outbreaks

Table 1. Norovirus Outbreaks* Reported to Maine CDC by County, Maine, 2008-2011

County	2008	2009	2010	2011
Androscoggin	3	11	5	4
Aroostook	2	5	0	0
Cumberland	1	12	14	17
Franklin	2	2	1	2
Hancock	0	1	1	4
Kennebec	3	14	2	11
Knox	0	1	1	0
Lincoln	3	1	0	2
Oxford	2	3	4	3
Penobscot	5	7	2	12
Piscataquis	0	2	3	1
Sagadahoc	4	0	0	1
Somerset	0	1	4	3
Waldo	2	0	1	2
Washington	1	0	1	4
York	5	6	0	11
Total	33	66	39	77

*includes confirmed and suspect outbreaks

Prevention and Control

Increasing knowledge about norovirus among the public and implementing disease control measures at the facility level is essential for controlling the spread of norovirus. Prevention measures for norovirus include but are not limited to the following:

- Wash hands with soap and water before and after eating or preparing food, after using the toilet, after changing diapers
 - Using alcohol based hand sanitizers may provide some benefit, but should

not be used as a substitute for thorough hand washing

- Rinse all fresh fruits and vegetables under clean running water
- Cook all foods, including oysters and other shellfish, thoroughly before eating
- Do not prepare food for others while symptomatic and for at least 48-72 hours after recovering
- Immediately clean and disinfect contaminated surfaces by using a bleach-based household cleaner
- Immediately remove and wash clothing or linens that may be contaminated with vomit or feces on the longest cycle setting and dry at the hot setting

Long term care facilities continue to report more norovirus outbreaks than other facilities in Maine. Guidance to control norovirus outbreaks in healthcare settings, including long term care facilities, is available from federal CDC and Maine CDC. These control measures include but are not limited to:

- Isolate symptomatic individuals or cohort cases
- Consider closing the facility to new admissions or limiting new admissions
- Post signs notifying visitors of the outbreak or limit visitors, to prevent spread of illness
- Exclude symptomatic staff from work for at least 48 hours after symptoms have resolved
- Wear surgical masks when cleaning vomit or feces
- Use EPA approved disinfectants for cleaning

Increased incidence or suspect outbreaks of gastrointestinal illness should be reported to Maine CDC by calling 1-800-821-5821. Specimens collected in an outbreak setting can be sent to HETL for norovirus testing.

For more information on norovirus:

- Maine CDC norovirus website www.mainepublichealth.gov
- Federal CDC norovirus website <http://www.cdc.gov/ncidod/dvrd/revb/gastro/norovirus.htm>
- HETL website www.mainepublichealth.gov/lab